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Abstract

The traditional approach to increase the power carrying capacity of existing AC transmission system is the utilization of capacitive compensation technique. Due to sub-synchronous resonance problem of this traditional approach a new alternative approach has been proposed which is called simultaneous AC-DC system. Some analysis shows that if the system is converted into HVDC system the power flow capacity can be increased in some cases. This paper deals with the performance comparison of aforesaid three transmission approaches. Through numerical analysis it is also investigated that the parameters like line voltage, line length and thermal limit have a great impact on the performance in terms of load ability improvement of different approaches of transmission system. In this case three different power systems are considered and simulations are performed applying all the approaches of transmission in each power system.

